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**Title:** JP2000285873A2: SECONDARY BATTERY AND BATTERY PACK

**Country:** JP Japan

**Kind:** A2 Document Laid open to Public inspection

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**Assignee:** MATSUSHITA ELECTRIC IND CO LTD  
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**Published / Filed:** 2000-10-13 / 1999-03-31

**Application Number:** JP1999000092580

**IPC Code:** H01M 2/02;

**Priority Number:** 1999-03-31 JP1999000092580

**Abstract:** PROBLEM TO BE SOLVED: To provide a battery excellent in safety by covering a battery case with a material formed of a heat radiating film.

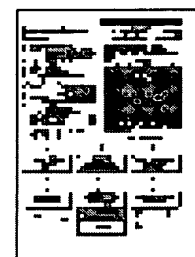
SOLUTION: In this secondary battery comprising a positive electrode terminal 1, a secondary battery case 2 and a material 3 of heat radiating film, a silicone rubber sheet or a rubber sheet containing heat conductive particles is used as the radiating film. As the heat conductive particles, particles of boron nitride, silicon nitride, alumina, silica, zinc oxide or the like are used. Since the material 3 of the heat radiating film has good radiating property, the heat generated in the battery can be released, so that the safety can be improved. When a radiating sheet having a heat conductivity of 0.3 kcal/m.h.°C or more is used, no smoke is caused without having any safety mechanism, and excellent safety can be obtained. When a silicon resin coating agent or silicon resin grease is applied to the battery case, the same effect can be obtained by arranging a sheet-like radiating film on the side of a battery pack.

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**Family:** None

**Forward References:** Go to Result Set: [Forward references \(2\)](#)

PDF	Patent	Pub.Date	Inventor	Assignee	Title
	US6586912	2003-07-01	Tsukamoto; Hisashi	Quallion LLC	Method and apparatus for amplitude limiting battery temperature spikes
	US6536668	2003-03-25	Detwiler; Paul O.	NCR Corporation	Dual aperture optical scanner



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**PATENT ABSTRACTS OF JAPAN**(21) Application number: **11092580**(51) Intl. Cl.: **H01M 2/02**(22) Application date: **31.03.99**

(30) Priority:	(71) Applicant: <b>MATSUSHITA ELECTRIC IN. LTD</b>
(43) Date of application publication: <b>13.10.00</b>	(72) Inventor: <b>YOKOYAMA TAKASHI MATSUHISA ICHIRO HIGO HIDEKI</b>
(84) Designated contracting states:	(74) Representative:

**(54) SECONDARY BATTERY  
AND BATTERY PACK**

(57) Abstract:

**PROBLEM TO BE SOLVED:** To provide a battery excellent in safety by covering a battery case with a material formed of a heat radiating film.

**SOLUTION:** In this secondary battery comprising a positive electrode terminal 1, a secondary battery case 2 and a material 3 of heat radiating film, a silicone rubber sheet or a rubber sheet containing heat conductive particles is used as the radiating film. As the heat conductive particles, particles of boron nitride, silicon nitride, alumina, silica, zinc oxide or the like are used. Since the material 3 of the heat radiating film has good radiating property, the heat generated in the battery can be released, so that the safety can be improved. When a radiating sheet having a heat conductivity of 0.3 kcal/m.h.°C or more is used, no

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